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Idaho

Basin Outlook Report

May 1, 1994



Basin Outlook Reports

and Federal - State - Private Cooperative Snow Surveys

For more water supply and resource management information, contact:
Your local Soil Conservation Service Office

Or
Soil Conservation Service
Snow Surveys
3244 Elder Street, Room 124
Boise, ID 83705-4711
(208) 334-1614

How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Soil Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

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IDAHO MOUNTAIN SNOWPACK

MAY 1, 1994

100 mi

LEGEND

- Near Average
90-110 percent
- Below Average
70-90 percent
- Much Below Average
50-70 percent
- Very Much Below Average
30-50 percent
- Extremely Below Average
Less than 30 percent

Figures equal percent of average for drainage.



SOCIAL SECURITY
U.S. DEPARTMENT OF AGRICULTURE

IDAHO WATER SUPPLY OUTLOOK REPORT

MAY 1, 1994

SUMMARY

Water users in many parts of Idaho can expect water shortages this summer. Unseasonably warm temperatures during April caused further declines in Idaho's meager mountain snowpack, and most areas now report snowpacks less than half of average. Spring and summer streamflow forecasts call for very low flows throughout the state, with near record minimum volumes forecast in the St. Joe, Spokane, Clearwater, Big Wood, and Big Lost drainages. Early season irrigation demands are already tapping into many reservoirs in southern Idaho, depleting that supply. Looking even farther ahead, the 1995 water supply may be entirely dependent upon next year's snowpack as many reservoirs will be nearly empty by the end of this season.

SNOWPACK

Warm temperatures during April caused significant snowmelt in most basins. Snowpacks currently range from only 30-40% of average in central Idaho to 40-50% in the northern, southern, and eastern portions of the state. In the Panhandle and Clearwater basins, the May 1 snowpack is the second and third lowest since 1961, respectively. The overall low snowpack figures indicate an early shift in the timing of snowmelt and runoff: streamflows will be low later in the summer when they are needed most.

PRECIPITATION

April precipitation was below normal in the north, near average in the central mountains, and well above average along the southern edge of the state. The Panhandle received about three-fourths of normal mountain precipitation; conversely, southside basins received about 170% of average. Overall, the April showers were a case of too little too late: the early snowmelt more than offset any gains from precipitation. Precipitation for the water year ranges from 60-70% of average for the entire state except the Bear River area which reports 77% of average. Soil moisture conditions are very dry statewide. Dryland farming, range conditions, forest health, and other concerns dependent upon natural precipitation will be impacted by the dry conditions this year.

RESERVOIRS

Idaho's reservoir storage will help but not eliminate water shortages in an otherwise drastically low runoff year. With most streams expected to yield only about half of normal flows, last year's carryover will be an important source of irrigation supplies. Storage in the Payette basin will meet expected irrigation demands while irrigators in the upper Snake may have just enough water this year. The Boise basin reports near average storage, but that will not be adequate to meet a full irrigation supply. Unseasonably warm temperatures have caused an early onset of irrigation demands, and most reservoirs will begin dropping very soon. With very little natural flow expected this year, reservoirs across the state will be nearly empty at the end of the 1994 irrigation season. Irrigators are encouraged to be water-wise this year in the hopes of retaining some carryover storage for 1995. Note: SCS reports reservoir information in terms of usable volumes, which includes both active, inactive, and in some cases dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in the back of this report.

STREAMFLOW

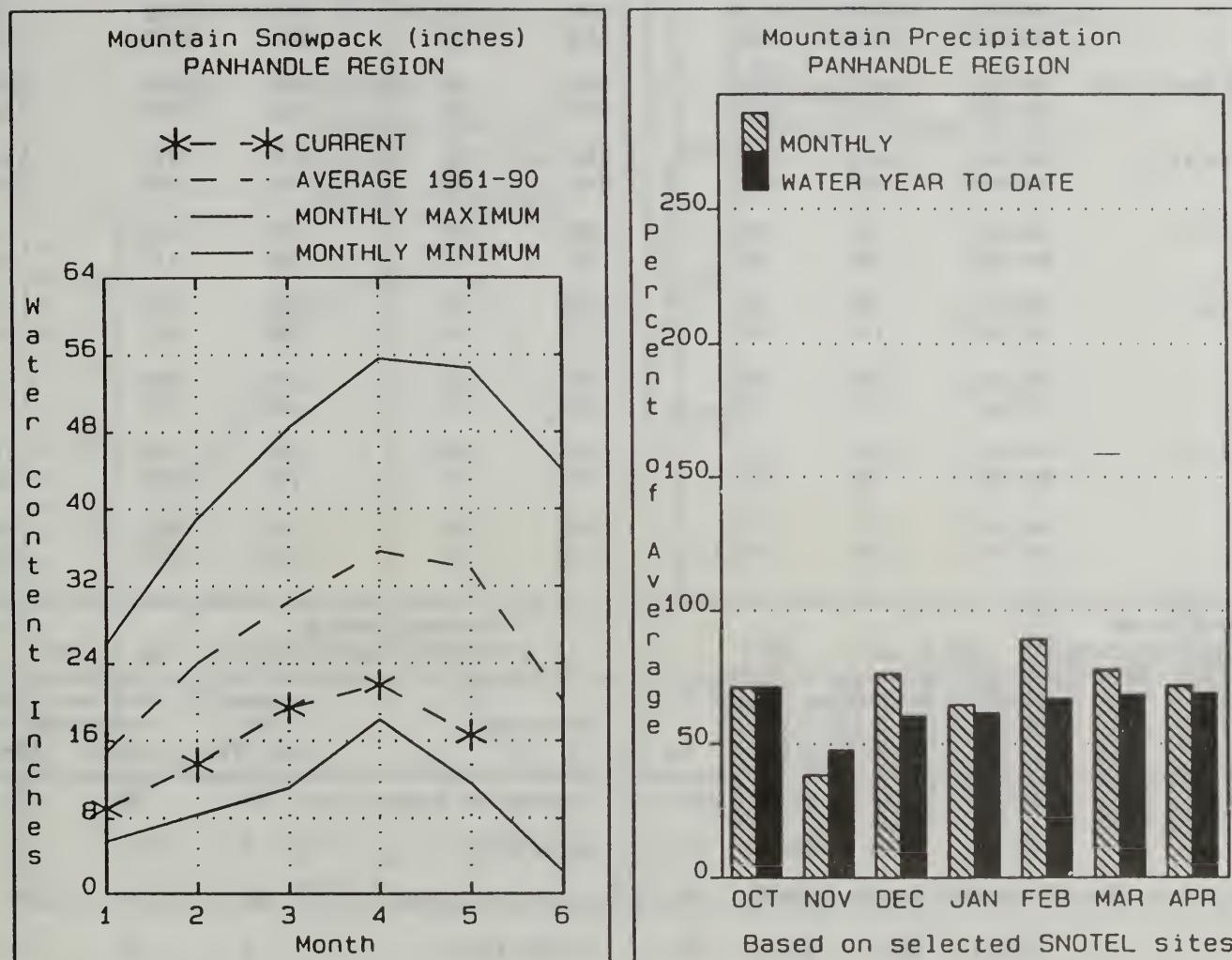
Hot weather in mid-April caused a rise in stream levels throughout most of Idaho. Some streams may have already reached their seasonal peak during this period, four to six weeks earlier than normal. Despite the increased flows, April runoff was still below average in central and southern Idaho. Northern Idaho and the upper Snake streams had normal to slightly above normal April runoff. Streamflow forecasts for the May through September period reflect the extremely low snowpack figures and range from less than 30% of average in the Wood and Lost River basins to around 60% of average in the upper Snake basin. Forecasts for the Big Wood and Clearwater basins call for record low volumes this summer. Stored reservoir water will augment summer flows in a number of basins, but natural streams could drop to low flow conditions as much as four to six weeks earlier than normal this year.

RECREATION OUTLOOK

Idaho recreational water users can expect low flows for many rivers this summer and an early drawdown of many reservoirs. Many streams recorded their peak flows during April -- four to six weeks earlier than normal. Northern Idaho streams will have an early runoff season, with lower than normal flows expected. Flows should be adequate for river running in the Salmon basin, but Middle Fork users should plan to use downstream launch points in July. River runners in the Payette and Snake basins can expect an excellent season due to the abundant reservoir storage in those areas. Southwest Idaho rivers are another story: the Jarbidge and Bruneau will have very low flows this year, and the Owyhee had its peak in early March. Reservoir users across the state should expect earlier than normal drawdowns as this important resource is used to meet summer irrigation demands.

PANHANDLE REGION

MAY 1, 1994



WATER SUPPLY OUTLOOK

April precipitation in the Panhandle Region was 72% of average, bringing the water year total to only 69% of average -- the lowest in at least 8 years. Similarly, the May 1 snowpack is the second lowest since 1961, with only 1977 reporting less snow. Snowpacks currently range from 40% of average in the Spokane River basin to 65% of average in the Kootenai basin in Canada. Streamflow forecasts call for about half of normal runoff with the St. Joe and Spokane rivers forecasts just above the record low volumes of 1992. Coeur D'Alene Lake is three-fourths full while Priest Lake is nearly full. The combined storage of the six major reservoirs in the Panhandle and Clark Fork basin in Montana is only 50% of capacity. Currently, the deep soil profile is very dry. The lack of precipitation will adversely affect dryland farming, forest health, and range conditions.

PANHANDLE REGION
Streamflow Forecasts - May 1, 1994

| Forecast Point | Forecast Period | <===== Drier ===== Future Conditions ===== Wetter =====> | | | | | | 30-Yr Avg. (1000AF) |
|----------------------------------|-----------------|--|-----------------|-----------------------|----|-----------------|-----------------|------------------------|
| | | 90% (1000AF) | 70% (1000AF) | Chance Of Exceeding * | | 30% (1000AF) | 10% (1000AF) | |
| KOOTENAI at Leonia (1,2) | MAY-JUL | 3330 | 4120 | 4480 | 72 | 4840 | 5630 | 6223 |
| | MAY-SEP | 3960 | 4890 | 5310 | 73 | 5730 | 6660 | 7304 |
| CLARK FK at Whitehorse Rpd (1,2) | MAY-JUL | 4010 | 5250 | 5820 | 58 | 6390 | 7630 | 10020 |
| | MAY-SEP | 4570 | 5960 | 6590 | 59 | 7220 | 8610 | 11200 |
| PEND OREILLE Lake Inflow (1,2) | MAY-JUL | 4010 | 5350 | 5960 | 54 | 6570 | 7910 | 11070 |
| | MAY-SEP | 4550 | 6040 | 6720 | 55 | 7400 | 8890 | 12290 |
| PRIEST nr Priest River (1,2) | MAY-JUL | 167 | 275 | 326 | 52 | 375 | 485 | 627 |
| | MAY-SEP | 196 | 305 | 355 | 52 | 405 | 515 | 680 |
| COEUR D'ALENE at Enaville | MAY-JUL | 94 | 163 | 210 | 44 | 255 | 325 | 472 |
| | MAY-SEP | 116 | 187 | 235 | 46 | 285 | 355 | 512 |
| ST.JOE at Calder | MAY-JUL | 240 | 320 | 375 | 43 | 430 | 510 | 881 |
| | MAY-SEP | 290 | 375 | 430 | 45 | 485 | 570 | 949 |
| SPOKANE near Post Falls (2) | MAY-JUL | 310 | 525 | 675 | 39 | 825 | 1040 | 1749 |
| | MAY-SEP | 390 | 610 | 760 | 41 | 910 | 1130 | 1846 |
| SPOKANE at Long Lake | MAY-JUL | 515 | 740 | 895 | 45 | 1050 | 1280 | 1975 |
| | MAY-SEP | 680 | 910 | 1070 | 49 | 1230 | 1460 | 2198 |

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of April

PANHANDLE REGION
Watershed Snowpack Analysis - May 1, 1994

| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
|---------------|-----------------|------------------------|-----------|--------|---------------------------|----------------------|-------------------|---------|
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| HUNGRY HORSE | 3451.0 | 1210.0 | 900.0 | 2043.0 | Kootenai ab Bonners Ferry | 16 | 78 | 55 |
| FLATHEAD LAKE | 1791.0 | 1000.0 | 787.0 | 937.2 | Moyie River | 1 | 81 | 49 |
| NOXON RAPIDS | 335.0 | 318.8 | 263.5 | 208.7 | Clark Fork River | 58 | 59 | 48 |
| PEND OREILLE | 1561.3 | 825.2 | 806.5 | 920.7 | Priest River | 4 | 73 | 54 |
| COEUR D'ALENE | 238.5 | 184.5 | 240.5 | 246.7 | Pend Oreille River | 85 | 67 | 54 |
| PRIEST LAKE | 119.3 | 116.0 | 82.0 | 96.2 | Rathdrum Creek | 0 | 0 | 0 |
| | | | | | Hayden Lake | 0 | 0 | 0 |
| | | | | | Coeur d'Alene River | 7 | 52 | 40 |
| | | | | | St. Joe River | 2 | 55 | 44 |
| | | | | | Spokane River | 9 | 53 | 41 |
| | | | | | Palouse River | 1 | 0 | 0 |

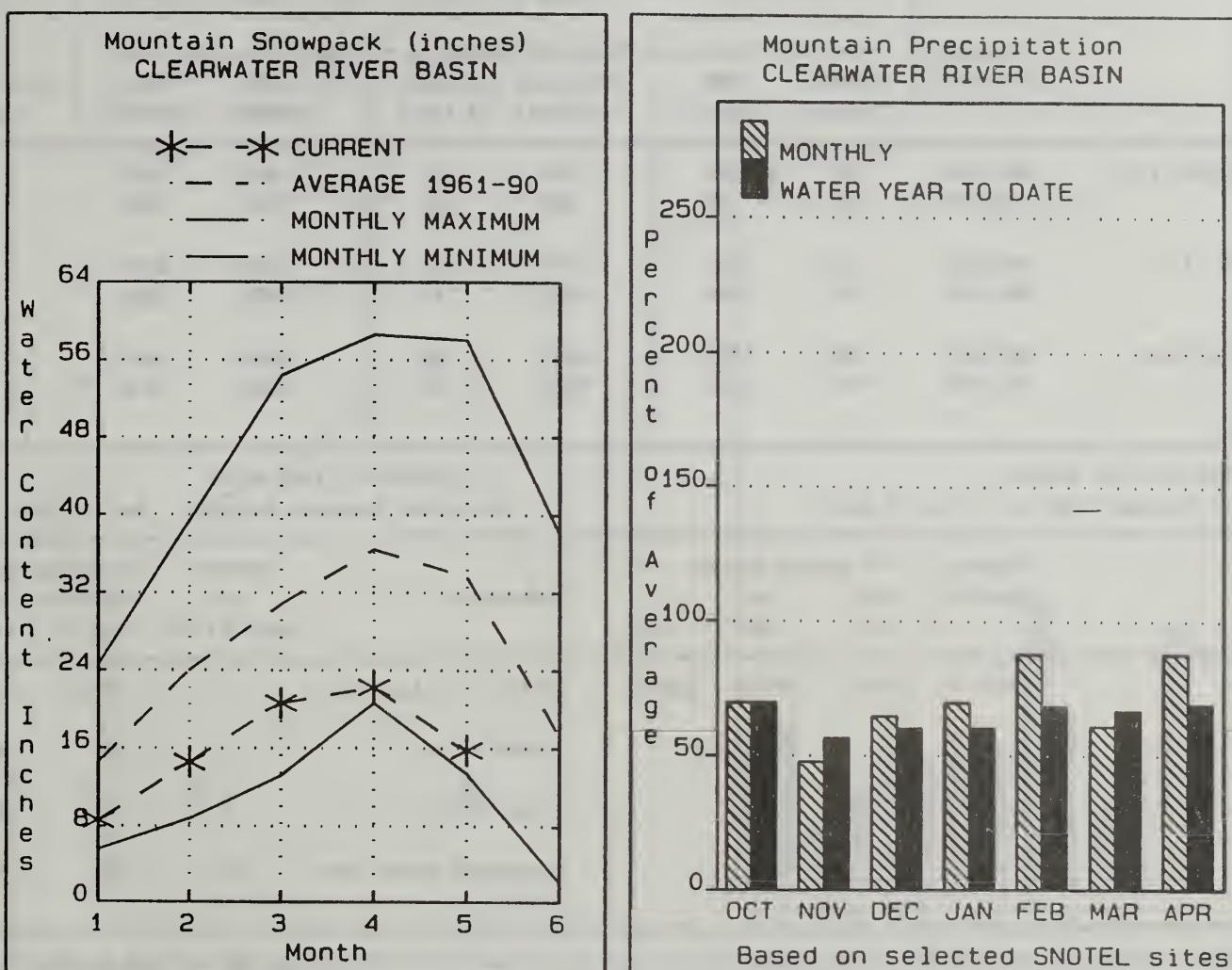
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

CLEARWATER RIVER BASIN

MAY 1, 1994



WATER SUPPLY OUTLOOK

Precipitation in the Clearwater basin was 88% of average in April. Water year to date precipitation is only 69% of average -- 15 percentage points less than last year at this time. The snowpack is currently half of normal and is the third lowest since 1961: only 1977 and 1987 had lower values. Streamflow forecasts call for 35-40% of average which are slightly less than the record minimum volumes of 1977. Streams in the Clearwater basin recorded snowmelt peak flows in late April, with the potential for another peak in early May. Summer baseflows are expected to return early and be lower than normal. Dryland farming and forest health will feel the impacts of these dry conditions.

CLEARWATER RIVER BASIN
Streamflow Forecasts - May 1, 1994

| Forecast Point | Forecast Period | <===== Drier ===== Future Conditions ===== Wetter =====> | | | | | | 30-Yr Avg. | |
|-------------------------------|-----------------|--|-----------------|---------------------------------|----------|-----------------|-----------------|------------|--|
| | | Chance Of Exceeding * | | | | | | | |
| | | 90% (1000AF) | 70% (1000AF) | 50% (Most Probable) (1000AF) | (% AVG.) | 30% (1000AF) | 10% (1000AF) | | |
| DWORSHAK Reservoir Inflow (2) | MAY-JUL | 365 | 575 | 720 | 35 | 865 | 1070 | 2029 | |
| | MAY-SEP | 520 | 735 | 880 | 40 | 1030 | 1240 | 2202 | |
| CLEARWATER at Orofino (1) | MAY-JUL | 750 | 1400 | 1690 | 44 | 1980 | 2630 | 3831 | |
| | MAY-SEP | 670 | 1360 | 1676 | 41 | 1990 | 2680 | 4089 | |
| CLEARWATER at Spalding (1,2) | MAY-JUL | 980 | 1860 | 2260 | 38 | 2660 | 3540 | 5972 | |
| | MAY-SEP | 1060 | 2000 | 2433 | 38 | 2860 | 3810 | 6405 | |

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of April

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - May 1, 1994

| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
|-----------|-----------------|------------------------|-----------|--------|------------------------|----------------------|-------------------|---------|
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| DWORSHAK | 3459.0 | 3110.7 | 3151.8 | 2276.0 | North Fork Clearwater | 11 | 59 | 47 |
| | | | | | Lochsa River | 4 | 63 | 47 |
| | | | | | Selway River | 5 | 62 | 50 |
| | | | | | Clearwater Basin Total | 18 | 60 | 47 |

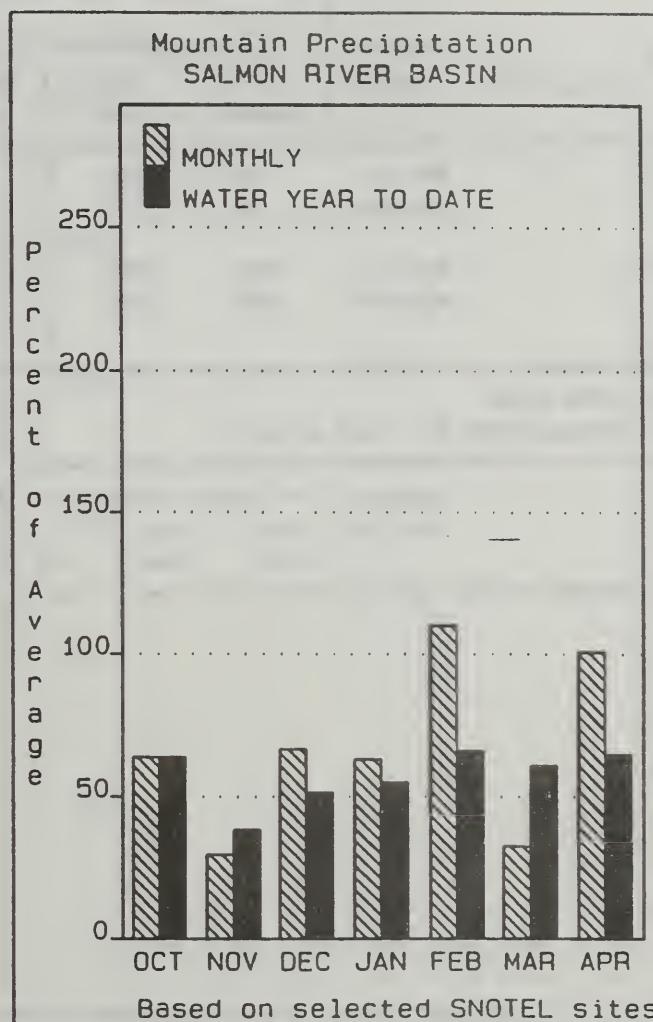
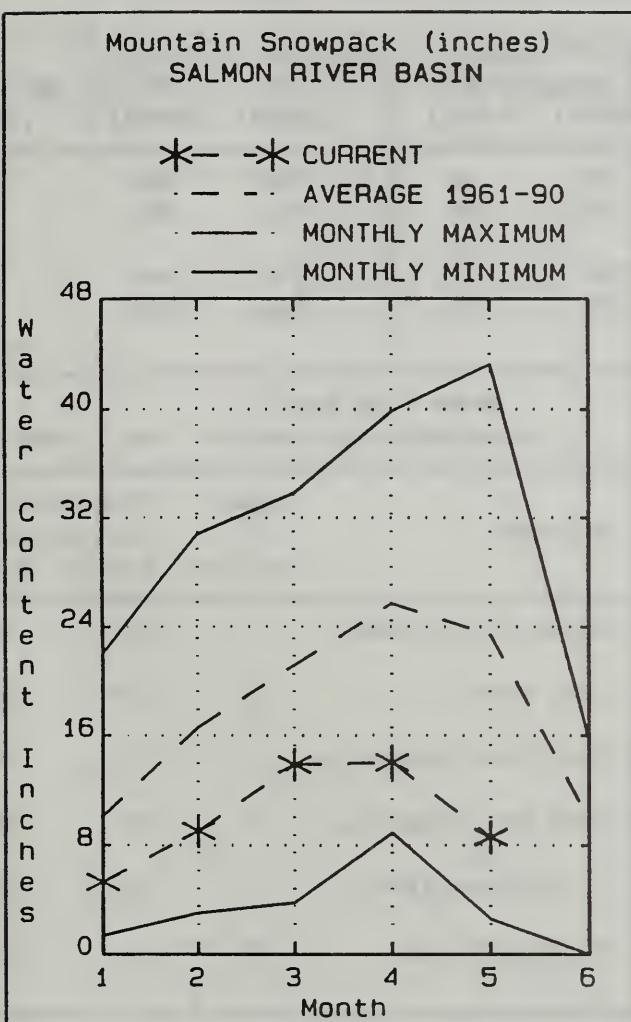
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

SALMON RIVER BASIN

MAY 1, 1994



WATER SUPPLY OUTLOOK

Despite near average mountain precipitation during April, snowpacks declined drastically as the weather warmed midway into the month. As of May 1, the snowpack was only 40% of average. An early snowmelt peak flow on the Salmon River at Whitebird occurred on April 23 (23,385 cfs) due to unusually hot weather. Warmer temperatures returning in early May might yield another streamflow peak. Forecasts for the remaining May-July period dropped from last month and now call for just 45% of average Salmon River at Whitebird. Flows should be adequate for recreational users in most cases, but irrigators and other water users will see a much earlier than normal return to low flow conditions. Soil moisture conditions are very dry, and will adversely impact dryland farming, range, and forest health.

SALMON RIVER BASIN
Streamflow Forecasts - May 1, 1994

| Forecast Point | Forecast Period | <===== Drier ===== Future Conditions ===== Wetter =====> | | | | | | 30-Yr Avg. | |
|--------------------------|-----------------|--|-----------------|---------------------------------|---------|-----------------|-----------------|------------|--|
| | | Chance Of Exceeding * | | | | | | | |
| | | 90% (1000AF) | 70% (1000AF) | 50% (Most Probable) (1000AF) | % AVG.) | 30% (1000AF) | 10% (1000AF) | | |
| SALMON at Salmon (1) | MAY-JUL | 82 | 280 | 370 | 48 | 460 | 660 | 772 | |
| | MAY-SEP | 76 | 310 | 420 | 46 | 530 | 765 | 922 | |
| SALMON at White Bird (1) | MAY-JUL | 1230 | 2010 | 2360 | 45 | 2710 | 3490 | 5284 | |
| | MAY-SEP | 1410 | 2280 | 2670 | 45 | 3060 | 3930 | 5930 | |

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of April

SALMON RIVER BASIN
Watershed Snowpack Analysis - May 1, 1994

| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
|-----------|-----------------|------------------------|-----------|-----|--------------------------|----------------------|-------------------|---------|
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| | | | | | Salmon River ab Salmon | 8 | 29 | 34 |
| | | | | | Lemhi River | 5 | 57 | 60 |
| | | | | | Middle Fork Salmon River | 3 | 31 | 34 |
| | | | | | South Fork Salmon River | 3 | 35 | 38 |
| | | | | | Little Salmon River | 4 | 20 | 24 |
| | | | | | Salmon Basin Total | 24 | 36 | 40 |

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

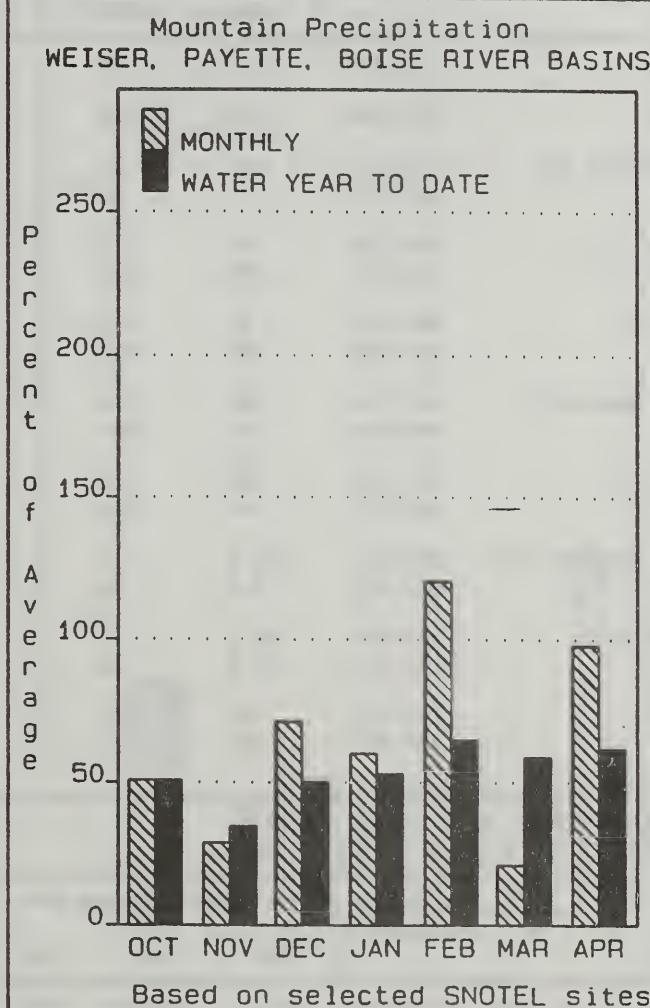
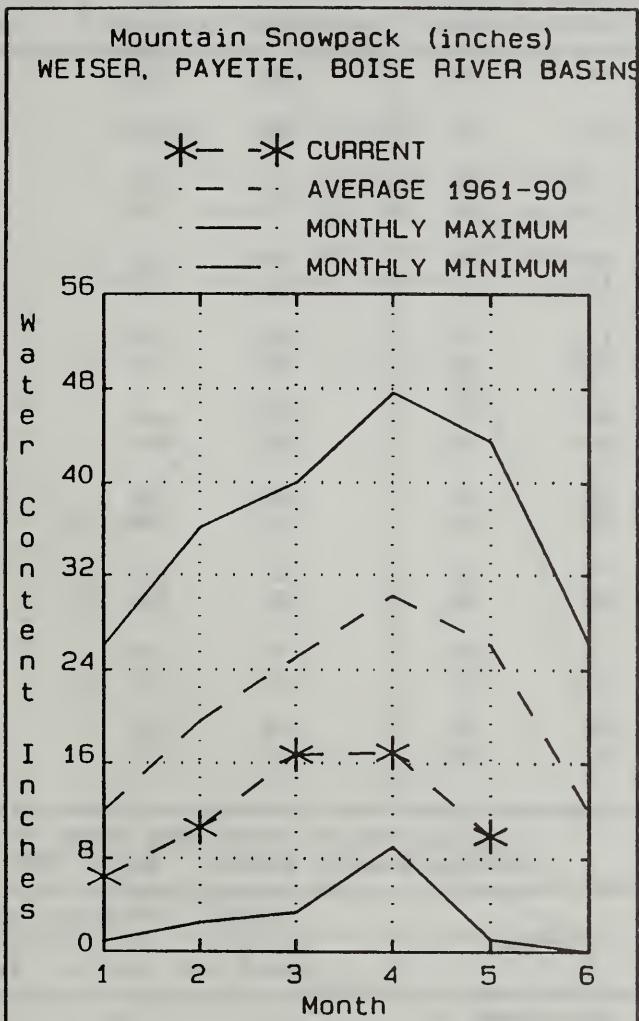
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS

MAY 1, 1994



WATER SUPPLY OUTLOOK

April provided normal precipitation to the west central mountains, however, snowpacks have declined significantly during the month due to unseasonably warm temperatures. Currently, snowpacks range from only 11% of average in the Weiser basin to 48% in the SF Boise. Streamflow forecasts reflect these low figures and call for less than 50% of average for the remaining spring and summer months. Reservoir storage in the Payette basin is above average; the Boise basin reports near average conditions. Neither system is expected to fill to capacity, and irrigation shortages are expected in the Boise basin. Inflows have just kept pace with drafting on the Boise system; with peak flows behind us the reservoirs will begin to drop quickly. Irrigators should practice conservation measures this year to provide some carryover for next year. For more specific information, water users are encouraged to keep in touch with their local irrigation districts.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - May 1, 1994

| Forecast Point | Forecast Period | Future Conditions | | | | | | 30-Yr Avg. (1000AF) | |
|------------------------------------|-----------------|--------------------|-----------------|-------------------------------|---------------------------------|---------------------|-----------------|------------------------|------|
| | | <===== Drier ===== | | ===== Future Conditions ===== | | ===== Wetter =====> | | | |
| | | 90% (1000AF) | 70% (1000AF) | Chance Of Exceeding * | 50% (Most Probable) (1000AF) | (% AVG.) | 30% (1000AF) | 10% (1000AF) | |
| WEISER nr Weiser (1) | MAY-JUL | 13.0 | 69 | | 112 | 45 | 156 | 250 | 250 |
| SF PAYETTE at Lowman | MAY-SEP | 170 | 197 | | 215 | 50 | 235 | 260 | 431 |
| DEADWOOD RESERVOIR Inflow (2) | MAY-JUL | 31 | 41 | | 48 | 40 | 55 | 65 | 120 |
| | MAY-SEP | 34 | 45 | | 52 | 41 | 59 | 70 | 127 |
| NF PAYETTE nr Cascade (2) | MAY-JUL | 92 | 136 | | 166 | 41 | 196 | 240 | 407 |
| | MAY-SEP | 108 | 155 | | 187 | 42 | 220 | 265 | 442 |
| NF PAYETTE nr Banks (2) | MAY-JUL | 87 | 149 | | 191 | 37 | 235 | 295 | 512 |
| | MAY-SEP | 107 | 174 | | 220 | 40 | 265 | 335 | 554 |
| PAYETTE nr Horseshoe Bend (2) | MAY-JUL | 265 | 380 | | 455 | 35 | 530 | 645 | 1304 |
| | MAY-SEP | 405 | 525 | | 610 | 42 | 695 | 815 | 1442 |
| BOISE near Twin Springs | MAY-JUL | 169 | 205 | | 230 | 45 | 255 | 290 | 509 |
| | MAY-SEP | 189 | 230 | | 255 | 45 | 280 | 320 | 564 |
| SF BOISE at Anderson Rnch Dm (1,2) | MAY-JUL | 16.0 | 80 | | 112 | 26 | 144 | 215 | 432 |
| | MAY-SEP | 9.0 | 86 | | 121 | 26 | 156 | 235 | 470 |
| MORES CK nr Arrowrock Dam | MAY-JUL | 14.0 | 21 | | 26 | 34 | 31 | 38 | 77 |
| | MAY-SEP | 17.0 | 24 | | 29 | 35 | 34 | 41 | 82 |
| BOISE nr Boise (1,2) | MAY-JUL | 146 | 285 | | 345 | 32 | 405 | 545 | 1090 |
| | MAY-SEP | 230 | 380 | | 445 | 37 | 510 | 660 | 1204 |

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of April

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - May 1, 1994

| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
|-------------------------|-----------------|------------------------|-----------|-------|---------------------------|----------------------|-------------------|---------|
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| MANN CREEK | 11.1 | 10.9 | 11.7 | 10.4 | Mann Creek | 1 | 9 | 13 |
| CASCADE | 703.2 | 524.3 | 448.2 | 411.7 | Weiser River | 3 | 8 | 11 |
| DEADWOOD | 161.9 | 114.6 | 75.2 | 101.1 | North Fork Payette | 7 | 27 | 32 |
| ANDERSON RANCH | 464.2 | 338.0 | 131.5 | 327.2 | South Fork Payette | 4 | 35 | 38 |
| ARROWROCK | 286.6 | 139.2 | 257.6 | 214.9 | Payette Basin Total | 12 | 31 | 35 |
| LUCKY PEAK | 293.2 | 202.6 | 246.4 | 182.9 | Middle & North Fork Boise | 6 | 38 | 45 |
| LAKE LOWELL (DEER FLAT) | 177.1 | 126.9 | 118.8 | 169.8 | South Fork Boise River | 5 | 40 | 48 |
| | | | | | Mores Creek | 4 | 35 | 41 |
| | | | | | Boise Basin Total | 11 | 38 | 45 |
| | | | | | Canyon Creek | 0 | 0 | 0 |

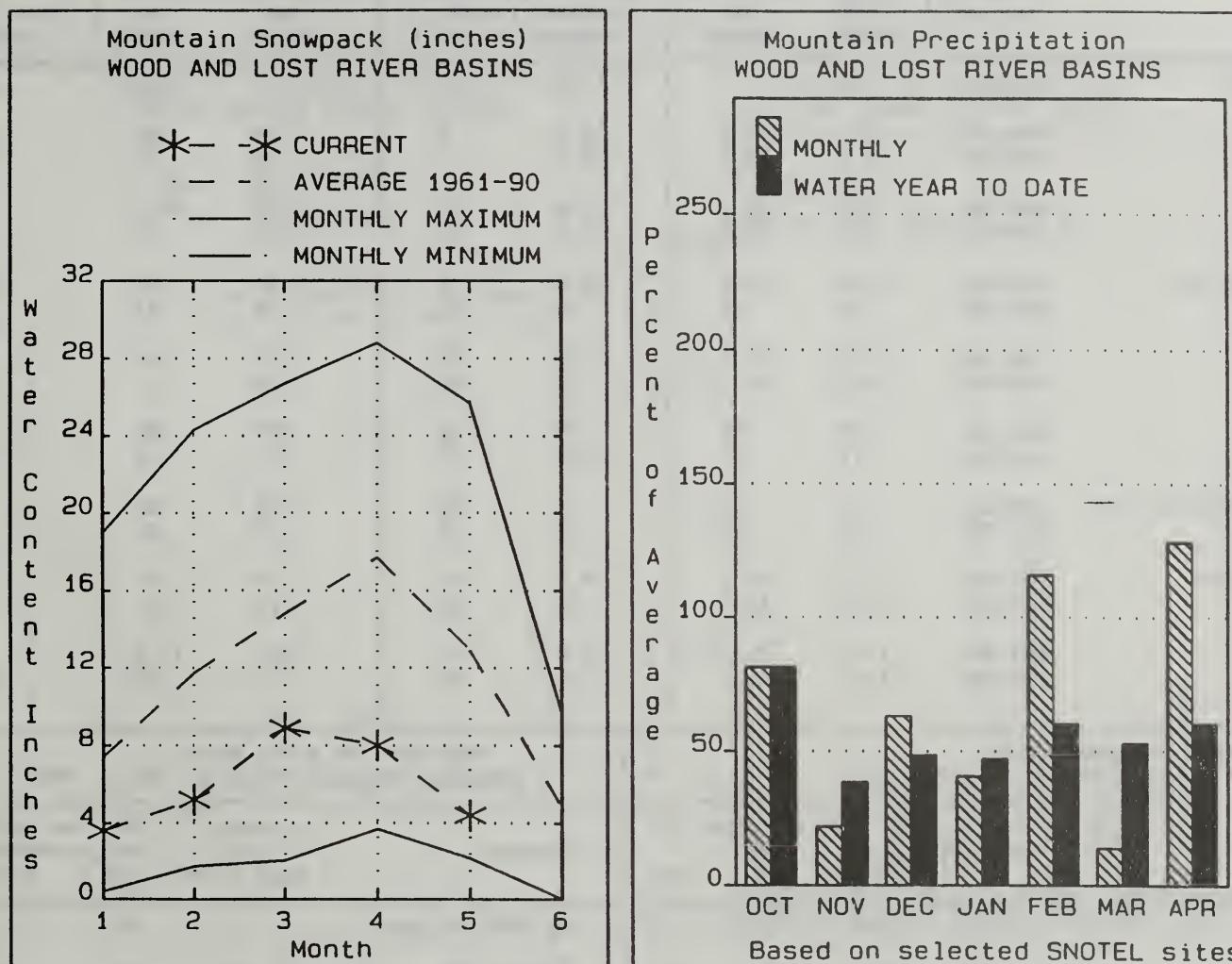
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WOOD and LOST RIVER BASINS

MAY 1, 1994



WATER SUPPLY OUTLOOK

Precipitation during April was 128% above average, but the unseasonably warm temperatures caused snowmelt which more than offset any moisture gains. Snowpacks are about the same as 1992: less than 40% of average throughout the basin. Streamflows are forecast at record low volumes for the Big Wood River, about 9% of average. Forecasts for the Little Wood and Mackay Reservoir inflows are about 33% of average, with the Little Lost River expected to yield 60% of average due to the large groundwater contribution in that basin. Magic Reservoir is about half full, Little Wood is near full and Mackay reports 87% of capacity. These storages will help offset the drastically low runoff, but agricultural water shortages are still expected. Water users should plan for another short year, and should keep in touch with their local irrigation districts for more specific information.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - May 1, 1994

| Forecast Point | Forecast Period | <===== Drier ===== Future Conditions =====> | | | | Wetter | | 30-Yr Avg. (1000AF) |
|-----------------------------------|-----------------|---|-----------------|--|----------|----------|----------|------------------------|
| | | Chance Of Exceeding * | | 50% (Most Probable) (1000AF) (% AVG.) | | 30% | 10% | |
| | | 90% (1000AF) | 70% (1000AF) | (1000AF) | (1000AF) | (1000AF) | (1000AF) | |
| BIG WOOD at Hailey (1) | MAY-SEP | 8.0 | | 72 | 28 | | 158 | 255 |
| BIG WOOD nr Bellevue | MAY-JUL | 12.0 | 13.0 | 13.0 | 8 | 29 | 53 | 156 |
| | MAY-SEP | 16.0 | 18.0 | 18.0 | 11 | 35 | 61 | 170 |
| CAMS CK nr Blaine | MAY-JUL | 0.0 | 2.0 | 6.0 | 14 | 11.0 | 19.0 | 42 |
| | MAY-SEP | 0.0 | 2.0 | 7.0 | 16 | 13.0 | 21 | 43 |
| BIG WOOD blw Magic Dam (2) | MAY-JUL | 16.0 | 18.0 | 18.0 | 9 | 37 | 65 | 202 |
| | MAY-SEP | 21 | 23 | 23 | 11 | 43 | 73 | 216 |
| LITTLE WOOD nr Carey | MAY-JUL | 17.0 | 18.0 | 20 | 31 | 26 | 34 | 65 |
| | MAY-SEP | 15.0 | 16.0 | 22 | 30 | 28 | 37 | 73 |
| BIG LOST at Howell | MAY-JUL | 59 | 79 | 93 | 55 | 107 | 128 | 169 |
| | MAY-SEP | 71 | 93 | 109 | 56 | 125 | 148 | 195 |
| BIG LOST blw Mackay Reservoir (2) | MAY-JUL | 21 | 35 | 45 | 33 | 55 | 69 | 137 |
| | MAY-SEP | 34 | 49 | 59 | 35 | 69 | 84 | 169 |
| LITTLE LOST blw Wet Creek | MAY-JUL | 11.0 | 15.0 | 18.0 | 65 | 20 | 24 | 27 |
| | MAY-SEP | 13.0 | 18.0 | 22 | 63 | 26 | 31 | 35 |
| LITTLE LOST nr Howe | MAY-JUL | 11.0 | 13.0 | 15.0 | 54 | 16.0 | 18.0 | 27 |
| | MAY-SEP | 16.0 | 19.0 | 21 | 55 | 23 | 27 | 38 |

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of April

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - May 1, 1994

| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
|-------------|-----------------|------------------------|-----------|-------|----------------------|----------------------|-------------------|---------|
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| MAGIC | 191.5 | 99.9 | 147.2 | 167.7 | Big Wood ab Magic | 7 | 30 | 37 |
| LITTLE WOOD | 30.0 | 29.5 | 26.4 | 24.6 | Camas Creek | 1 | 0 | 0 |
| MACKAY | 44.4 | 38.5 | 29.1 | 34.2 | Big Wood Basin Total | 8 | 30 | 37 |
| | | | | | Little Wood River | 3 | 29 | 38 |
| | | | | | Fish Creek | 0 | 0 | 0 |
| | | | | | Big Lost River | 6 | 26 | 32 |
| | | | | | Little Lost River | 3 | 20 | 26 |

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

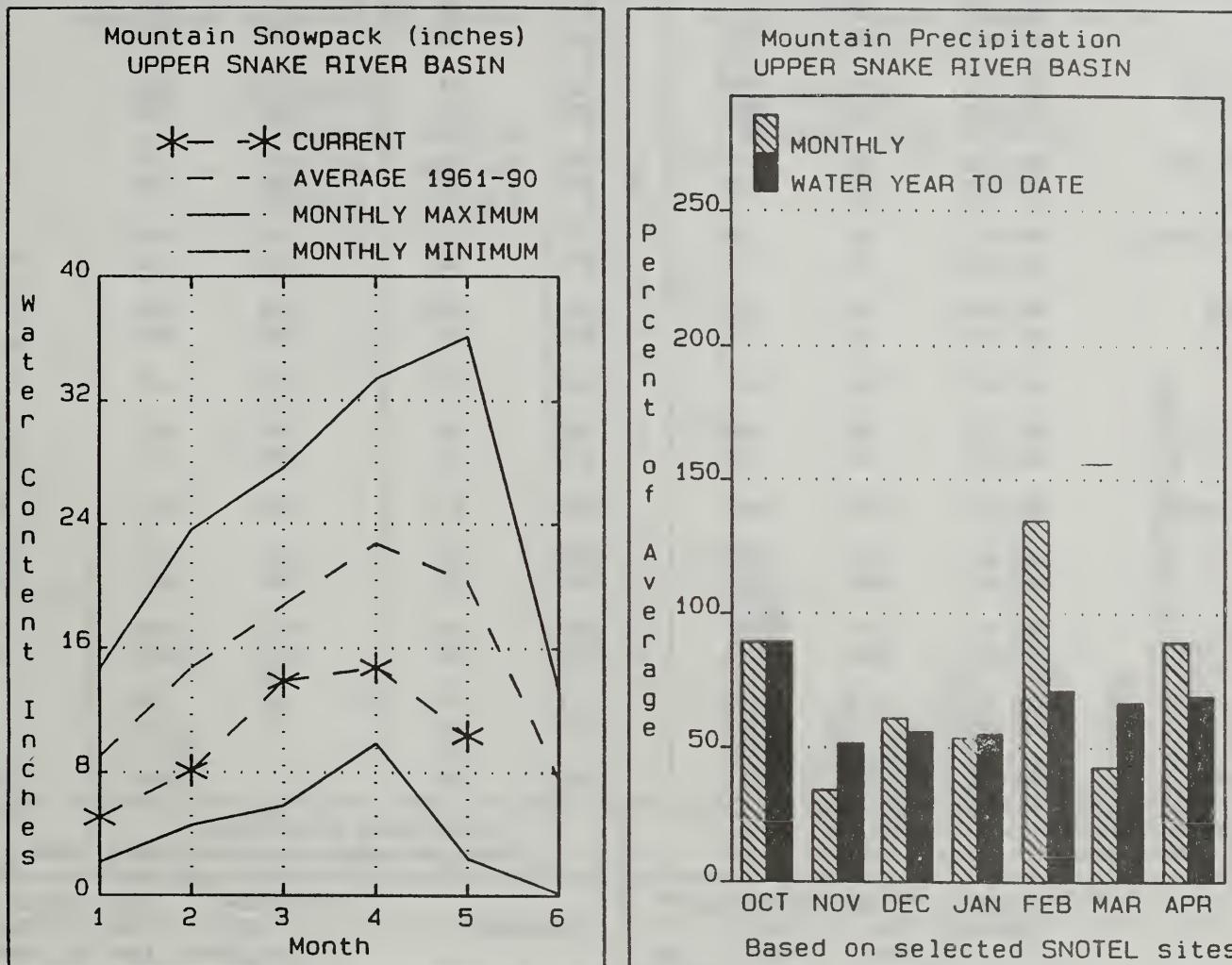
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

UPPER SNAKE RIVER BASIN

MAY 1, 1994



WATER SUPPLY OUTLOOK

April precipitation in the upper Snake basin was 89% of average, and the unseasonably warm temperatures have caused snowpacks to drop dramatically over the last month. Currently, snowpacks range from only 40 to 60% of average in the basin. Streamflow forecasts reflect these low numbers and call for only 50-70% of average. The good news continues to be reservoirs: the upper Snake system is almost full and should buffer most potential water shortages. Irrigators should, however, practice water conservation measures in an effort to keep some carryover for next year.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - May 1, 1994

| Forecast Point | Forecast Period | <===== Drier ===== Future Conditions ===== Wetter =====> | | | | | | 30-Yr Avg. (1000AF) | |
|----------------------------------|-----------------|--|-----------------|--|----|---------------------------------|------|------------------------|--|
| | | Chance Of Exceeding * | | 50% (Most Probable) (1000AF) (% AVG.) | | 30% (1000AF) 10% (1000AF) | | | |
| | | 90% (1000AF) | 70% (1000AF) | | | | | | |
| HENRYS FORK nr Ashton (2) | MAY-JUL | 245 | 285 | 315 | 73 | 345 | 385 | 432 | |
| | MAY-SEP | 335 | 390 | 430 | 70 | 470 | 525 | 618 | |
| HENRYS FORK nr Rexburg (2) | MAY-JUL | 495 | 570 | 620 | 61 | 670 | 750 | 1016 | |
| | MAY-SEP | 640 | 735 | 800 | 60 | 865 | 960 | 1339 | |
| FALLS RIVER nr Squirrel (2) | MAY-JUL | 129 | 149 | 163 | 51 | 177 | 197 | 322 | |
| | MAY-SEP | 145 | 170 | 186 | 48 | 205 | 225 | 390 | |
| TETON abv S Leigh Ck nr Driggs | MAY-JUL | 52 | 68 | 79 | 61 | 90 | 106 | 130 | |
| | MAY-SEP | 77 | 97 | 110 | 62 | 123 | 143 | 177 | |
| TETON nr St. Anthony (2) | MAY-JUL | 84 | 122 | 148 | 45 | 174 | 210 | 329 | |
| | MAY-SEP | 130 | 175 | 205 | 50 | 235 | 280 | 408 | |
| SNAKE nr Moran (1,2) | MAY-SEP | 360 | 440 | 480 | 59 | 520 | 600 | 814 | |
| SALT abv Reservoir nr Etna | MAY-JUL | 89 | 135 | 167 | 64 | 199 — | 245 | 261 | |
| | MAY-SEP | 128 | 180 | 215 | 63 | 250 | 300 | 341 | |
| PALISADES Rsvr Inflow (adj) | MAY-SEP | 1430 | 1660 | 1820 | 53 | 1980 | 2210 | 3426 | |
| SNAKE nr Heise (2) | MAY-JUL | 1440 | 1670 | 1830 | 60 | 1990 | 2220 | 3073 | |
| | MAY-SEP | 1560 | 1830 | 2010 | 55 | 2190 | 2460 | 3670 | |
| SNAKE nr Blackfoot (2) | MAY-JUL | 1510 | 1950 | 2250 | 58 | 2550 | 2990 | 3855 | |
| | MAY-SEP | 1900 | 2370 | 2700 | 56 | 3030 | 3500 | 4806 | |
| PORTNEUF at Topaz | MAY-JUL | 15.0 | 22 | 27 | 49 | 32 | 39 | 55 | |
| | MAY-SEP | 21 | 31 | 37 | 49 | 43 | 53 | 76 | |
| AMERICAN FALLS RESV Inflow (1,2) | MAY-JUL | 1630 | | 635 | 26 | | 3570 | 2463 | |

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of April

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - May 1, 1994

| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
|----------------|-----------------|------------------------|-----------|--------|--------------------------|----------------------|-------------------|---------|
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| HENRYS LAKE | 90.4 | 89.3 | 66.6 | 81.8 | Camas-Beaver Creeks | 2 | 6 | 10 |
| ISLAND PARK | 135.2 | 134.2 | 103.7 | 125.7 | Henrys Fork River | 10 | 45 | 49 |
| GRASSY LAKE | 15.2 | 13.9 | 13.7 | 11.7 | Teton River | 8 | 42 | 51 |
| JACKSON LAKE | 847.0 | 670.0 | 202.7 | 456.5 | Snake above Jackson Lake | 8 | 41 | 42 |
| PALISADES | 1400.0 | 1397.2 | 697.5 | 950.0 | Gros Ventre River | 3 | 50 | 52 |
| RIRIE | 80.5 | 59.2 | 38.5 | 59.4 | Hoback River | 6 | 48 | 53 |
| BLACKFOOT | 348.7 | 225.1 | 83.5 | 274.6 | Greys River | 5 | 57 | 62 |
| AMERICAN FALLS | 1672.6 | 1639.6 | 1613.2 | 1542.9 | Salt River | 5 | 40 | 46 |
| | | | | | Snake above Palisades | 27 | 45 | 49 |
| | | | | | Willow Creek | 4 | 18 | 23 |
| | | | | | Blackfoot River | 2 | 10 | 10 |
| | | | | | Portneuf River | 2 | 17 | 29 |
| | | | | | Snake abv American Falls | 34 | 41 | 46 |

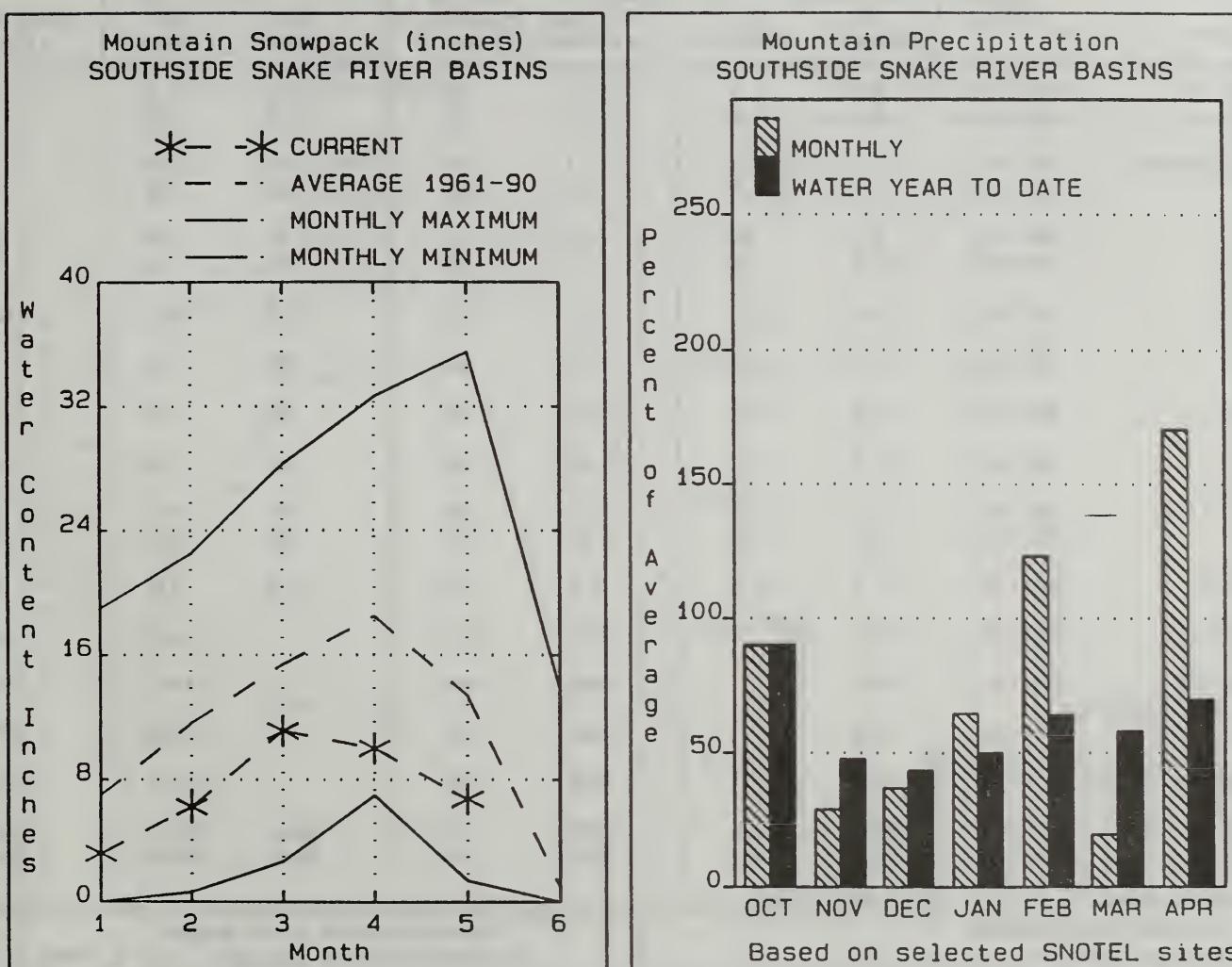
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table. The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS

MAY 1, 1994



WATER SUPPLY OUTLOOK

The southern edge of the state was blessed with above average precipitation during April: mountain SNOTEL sites reported a whopping 170% of average.

Unfortunately, it's a case of too little too late as snowpacks continue to decline in response to the unseasonably warm weather. Currently, snowpacks are only about half of normal in the area. Streamflow forecasts continue to look bleak and call for only 30-40% of normal runoff. Reservoirs are also well below normal, resulting in grim prospects for this year's water supply. Agricultural water shortages are expected in most areas; water users should keep in touch with their local irrigation districts for more specific information.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - May 1, 1994

| Forecast Point | Forecast Period | Future Conditions | | | | | | 30-Yr Avg. (1000AF) |
|-------------------------------------|-----------------|--------------------|-----------------|---------------------------------|----------|-----------------|-----------------|------------------------|
| | | <===== Drier ===== | | Chance Of Exceeding * | | | Wetter =====> | |
| | | 90% (1000AF) | 70% (1000AF) | 50% (Most Probable) (1000AF) | (% AVG.) | 30% (1000AF) | 10% (1000AF) | |
| OAKLEY RESERVOIR Inflow (2) | MAY-JUL | 0.0 | 2.0 | 6.0 | 30 | 11.0 | 17.0 | 21 |
| | MAY-SEP | 0.0 | 4.0 | 9.0 | 35 | 13.0 | 20 | 24 |
| SALMON FALLS CK nr San Jacinto | MAY-JUL | 3.0 | 8.0 | 21 | 37 | 34 | 53 | 57 |
| | MAY-SEP | 1.0 | 9.0 | 22 | 35 | 36 | 56 | 62 |
| BRUNEAU nr Hot Spring | MAY-JUL | 3.0 | 31 | 50 | 31 | 69 | 97 | 162 |
| | MAY-SEP | 11.0 | 42 | 62 | 36 | 83 | 113 | 173 |
| OWYHEE nr Gold Ck (2) | MAY-JUL | 0.0 | 0.1 | 3.1 | 25 | 6.8 | 12.2 | 12.5 |
| OWYHEE nr Owyhee (2) | MAY-JUL | 1.0 | 14.0 | 24 | 41 | 35 | 50 | 58 |
| SF Owyhee nr Whiterock | MAY-JUL | 4.0 | 7.0 | 21 | 40 | 35 | 55 | 52 |
| OWYHEE nr Rome | MAY-JUL | 2.0 | 20 | 40 | 20 | 80 | 140 | 200 |
| OWYHEE RESERVOIR Inflow (1,2) | MAY-JUL | 2.0 | 14.0 | 55 | 26 | 96 | 186 | 210 |
| | MAY-SEP | 2.0 | 22 | 64 | 27 | 107 | 200 | 238 |
| SUCCOR CK nr Jordan Valley | MAY-JUL | 0.1 | 0.2 | 2.0 | 39 | 3.8 | 6.4 | 5.1 |
| SNAKE RIVER at King Hill (2) | MAY-JUL | 610 | | 1240 | 61 | | 1830 | 2038 |
| SNAKE RIVER near Murphy (2) | MAY-JUL | 625 | | 1300 | 63 | | 1910 | 2077 |
| SNAKE RIVER at Weiser (2) | MAY-JUL | 415 | | 1480 | 39 | | 2580 | 3793 |
| SNAKE RIVER at Hells Canyon Dam (2) | MAY-JUL | 515 | | 1640 | 38 | | 2910 | 4276 |
| SNAKE blw Lower Granite Dam (1,2) | MAY-JUL | 3880 | 6140 | 7170 | 42 | 8200 | 10500 | 16940 |
| | MAY-SEP | 4450 | 7060 | 8253 | 42 | 9440 | 12100 | 19650 |

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of April

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - May 1, 1994

| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
|---------------------|-----------------|------------------------|-----------|-------|----------------------|----------------------|-------------------|---------|
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| OAKLEY | 77.4 | 18.8 | 22.5 | 39.2 | Raft River | 1 | 27 | 49 |
| SALMON FALLS | 182.6 | 55.6 | 57.3 | 81.4 | Goose-Trapper Creeks | 3 | 20 | 29 |
| WILDHORSE RESERVOIR | 71.5 | 37.4 | 36.0 | 47.2 | Salmon Falls Creek | 5 | 47 | 58 |
| OWYHEE | 715.0 | 449.8 | 715.9 | 619.0 | Bruneau River | 5 | 43 | 54 |
| BROWNLEE | 1419.3 | 1379.0 | 1400.2 | 959.9 | Owyhee Basin Total | 7 | 29 | 40 |

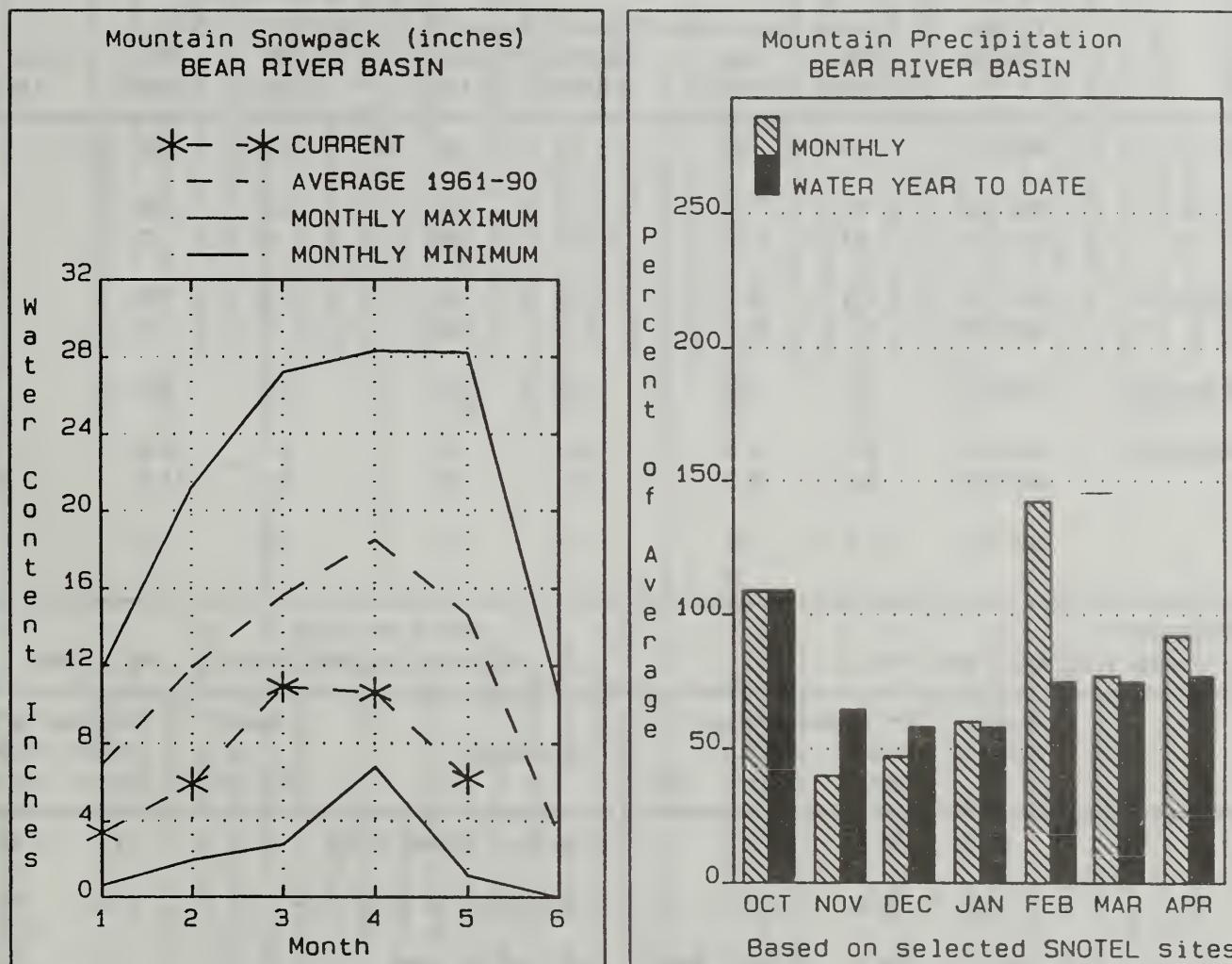
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

BEAR RIVER BASIN

MAY 1, 1994



WATER SUPPLY OUTLOOK

Mountain precipitation in southeastern Idaho was 92% of average during April. Unfortunately, melt caused by warm temperatures during the month more than offset any gains as snowpacks continue to decline. Snowpacks currently range from 40-60% of average. Streamflow forecasts call for 50-60% of average for most streams in the area. Montpelier Creek Reservoir is 88% of capacity, but Bear Lake reports only 42% full. Soil moisture conditions are very dry, and dryland agriculture will be severely impacted. Irrigators should be prepared for another year of water shortages, and should keep in touch with their local irrigation districts for more specific information.

BEAR RIVER BASIN
Streamflow Forecasts - May 1, 1994

| Forecast Point | Forecast Period | <===== Drier ===== Future Conditions ===== Wetter =====> | | | | | | 30-Yr Avg. (1000AF) | |
|--------------------------------|-----------------|--|-----------------|---|----|-----------------|-----------------|------------------------|--|
| | | Chance Of Exceeding * | | | | | | | |
| | | 90% (1000AF) | 70% (1000AF) | 50% (Most Probable) (1000AF) (%) AVG.) | | 30% (1000AF) | 10% (1000AF) | | |
| BEAR RIVER nr Randolph | APR-JUL | 5.0 | 50 | 81 | 62 | 112 | 157 | 131 | |
| SMITHS FORK nr Border, WY | MAY-JUL | 31 | 41 | 48 | 52 | 55 | 65 | 92 | |
| | MAY-SEP | 38 | 49 | 57 | 52 | 65 | 77 | 109 | |
| THOMAS FORK nr WY-ID Stateline | MAY-JUL | 6.0 | 11.0 | 15.0 | 54 | 18.0 | 23 | 27 | |
| | MAY-SEP | 7.0 | 12.0 | 16.0 | 53 | 20 | 25 | 30 | |
| BEAR RIVER blw Stewart Dam (2) | APR-SEP | 76 | 132 | 170 | 57 | 210 | 265 | 298 | |
| MONTPELIER CREEK nr Montpelier | APR-JUL | 2.0 | 4.6 | 6.3 | 52 | 8.0 | 10.6 | 12.2 | |
| | APR-SEP | 2.6 | 5.5 | 7.4 | 52 | 9.3 | 12.2 | 14.2 | |
| CUB RIVER nr Preston | APR-JUL | 17.0 | 22 | 25 | 53 | 28 | 33 | 47 | |

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of April

BEAR RIVER BASIN
Watershed Snowpack Analysis - May 1, 1994

| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of Last Yr Average | |
|------------------|-----------------|------------------------|-----------|--------|--------------------------|----------------------|-----------------------------------|----|
| | | This Year | Last Year | Avg | | | | |
| WOODRUFF NARROWS | 57.3 | 57.3 | --- | --- | Smiths & Thomas Forks | 3 | 41 | 48 |
| WOODRUFF CREEK | 4.0 | 4.0 | 4.0 | --- | Bear River ab WY-ID line | 10 | 47 | 62 |
| BEAR LAKE | 1421.0 | 589.9 | 316.9 | 1059.0 | Montpelier Creek | 2 | 40 | 45 |
| MONTPELIER CREEK | 4.0 | 3.5 | 2.0 | 2.2 | Mink Creek | 1 | 30 | 36 |
| | | | | | Cub River | 1 | 56 | 85 |
| | | | | | Bear River ab ID-UT line | 17 | 42 | 55 |
| | | | | | Malad River | 1 | 0 | 0 |

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Streamflow forecasts are projections of runoff volumes that would have occurred naturally without influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and interbasin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report.

Panhandle River Basins

| Weiser, Payette, Boise River Basins | |
|--|--|
| KOOTENAI R AT LEONIA, ID + LAKE KOOCANUSA (STORAGE CHANGE) | WEISER R NR WEISER, ID - No Corrections |
| CLARK FORK AT WHITEHORSE RAPIDS, ID + HUNGRY HORSE (STORAGE CHANGE) | SF PAYETTE R AT LOWMAN, ID - No Corrections |
| + FLATHEAD LAKE (STORAGE CHANGE) | DEADWOOD RESERVOIR INFLOW, ID + DEADWOOD R BLW DEADWOOD RESV NR LOWMAN |
| + NOXON RAPIDS RESV (STORAGE CHANGE) | + DEADWOOD RESV (STORAGE CHANGE) |
| PEND OREILLE LAKE INFLOW, ID + PEND OREILLE R AT NEWPORT, WA + HUNGRY HORSE (STORAGE CHANGE) | NF PAYETTE R AT CASCADE, ID + CASCADE RESV (STORAGE CHANGE) |
| + FLATHEAD LAKE (STORAGE CHANGE) | PAYETTE R NR HORSESHOE BEND, ID + DEADWOOD RESV (STORAGE CHANGE) |
| + NOXON RAPIDS (STORAGE CHANGE) | + CASCADE RESV (STORAGE CHANGE) |
| + PEND OREILLE LAKE (STORAGE CHANGE) | BOISE R NR TWIN SPRINGS, ID - No Corrections |
| PRIEST R NR PRIEST R, ID + PRIEST LAKE (STORAGE CHANGE) | SF BOISE R AT ANDERSON RANCH DAM, ID + ANDERSON RANCH RESV (STORAGE CHANGE) |
| COEUR D'ALENE R AT ENAVILLE, ID - No Corrections | MORES CK NR ARROWROCK DAM, ID - No Corrections |
| ST. JOE R AT CALDER, ID - No Corrections | BOISE R NR BOISE, ID + ANDERSON RANCH RESV (STORAGE CHANGE) |
| SPOKANE R NR POST FALLS, ID + COEUR D'ALENE LAKE (STORAGE CHANGE) | + ARROWROCK RESV (STORAGE CHANGE) + LUCKY PEAK RESV (STORAGE CHANGE) |
| + RATHDRUM PRAIRIE CANAL AT HEUTTER, ID | + JACKSON LAKE (STORAGE CHANGE) |

Clearwater River Basin

| | |
|--|--|
| DWORSHAK RESERVOIR INFLOW, ID + CLEARWATER R NR PECK, ID | BIG WOOD R AT HAILEY, ID - No Corrections |
| + DWORSHAK RESV (STORAGE CHANGE) | BIG WOOD R NR BELLEVUE, ID - No Corrections |
| - CLEARWATER R AT OROFINO, ID | CAMAS CK NR BLAINE, ID - No Corrections |
| CLEARWATER R AT OROFINO, ID - No Corrections | BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID + MAGIC RESV (STORAGE CHANGE) |
| CLEARWATER R AT SPALDING, ID + DWORSHAK RESV (STORAGE CHANGE) | LITTLE WOOD R NR CAREY, ID + LITTLE WOOD RESV (STORAGE CHANGE) |

Salmon River Basin

| |
|---|
| SALMON R AT SALMON, ID - No Corrections |
| SALMON R AT WHITE BIRD, ID - No Corrections |

Upper Snake River Basin

| Weiser, Payette, Boise River Basins | |
|---|---|
| HENRYS FORK NR ASHTON, ID + HENRYS LAKE (STORAGE CHANGE) | HENRYS FORK NR ASHTON, ID + HENRYS LAKE (STORAGE CHANGE) |
| + ISLAND PARK RESV (STORAGE CHANGE) | + ISLAND PARK RESV (STORAGE CHANGE) |
| HENRYS FORK NR REXBURG, ID + HENRYS LAKE (STORAGE CHANGE) | HENRYS FORK NR REXBURG, ID + HENRYS LAKE (STORAGE CHANGE) |
| + DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID + DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG, ID | + DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID + DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG, ID |
| + GRASSY LAKE (STORAGE CHANGE) | + GRASSY LAKE (STORAGE CHANGE) |
| FALLS R NR SQUIRREL, ID + GRASSY LAKE (STORAGE CHANGE) | FALLS R NR SQUIRREL, ID + GRASSY LAKE (STORAGE CHANGE) |
| TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections | TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections |
| TETON R NR ST. ANTHONY, ID - CROSS CUT CANAL | TETON R NR ST. ANTHONY, ID - CROSS CUT CANAL |
| + SUM OF DIVERSIONS ABV GAGE | + SUM OF DIVERSIONS ABV GAGE |
| SNAKE R NR MORAN, WY + JACKSON LAKE (STORAGE CHANGE) | SNAKE R NR MORAN, WY + JACKSON LAKE (STORAGE CHANGE) |
| PALISADES RESERVOIR INFLOW, ID + SNAKE R NR IRWIN, ID | PALISADES RESERVOIR INFLOW, ID + SNAKE R NR IRWIN, ID |
| + PALISADES RESV (STORAGE CHANGE) | + PALISADES RESV (STORAGE CHANGE) |
| + JACKSON LAKE (STORAGE CHANGE) | + JACKSON LAKE (STORAGE CHANGE) |
| SNAKE R NR HEISE, ID + PALISADES RESV (STORAGE CHANGE) | SNAKE R NR HEISE, ID + PALISADES RESV (STORAGE CHANGE) |
| + JACKSON LAKE (STORAGE CHANGE) | + JACKSON LAKE (STORAGE CHANGE) |
| SNAKE R NR BLACKFOOT, ID + PALISADES RESV (STORAGE CHANGE) | SNAKE R NR BLACKFOOT, ID + PALISADES RESV (STORAGE CHANGE) |
| + JACKSON LAKE (STORAGE CHANGE) | + JACKSON LAKE (STORAGE CHANGE) |
| + DIV FM SNAKE R BTW HEISE AND SHELLY GAGES | + DIV FM SNAKE R BTW HEISE AND SHELLY GAGES |
| PORTNEUF R AT TOPAZ, ID - No Corrections | PORTNEUF R AT TOPAZ, ID - No Corrections |
| AMERICAN FALLS RESERVOIR INFLOW, ID + SNAKE R AT NEELEY, ID | AMERICAN FALLS RESERVOIR INFLOW, ID + SNAKE R AT NEELEY, ID |
| + AMERICAN FALLS (STORAGE CHANGE) | + AMERICAN FALLS (STORAGE CHANGE) |
| + PALISADES RESV (STORAGE CHANGE) | + PALISADES RESV (STORAGE CHANGE) |
| + JACKSON LAKE (STORAGE CHANGE) | + JACKSON LAKE (STORAGE CHANGE) |
| LITTLE LOST R NR HOWE, ID (Disc) - No Corrections | LITTLE LOST R NR HOWE, ID (Disc) - No Corrections |

Southside Snake River Basins

RESERVOIR CAPACITY DEFINITIONS - Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. The table below lists these volumes for each reservoir in this report, and defines the storage volumes that SCS uses when reporting capacity and current reservoir storage. In most cases, SCS reports usable storage, which includes active and inactive storage.

| | BASIN/ RESERVOIR | DEAD STORAGE | INACTIVE STORAGE | ACTIVE STORAGE | SURCHARGE STORAGE | SCS CAPACITY | SCS FIGURES INCLUDE |
|---|--|---------------------------|--|----------------------|------------------------------------|------------------------------------|--------------------------|
| <u>PANHANDLE REGION</u> | | | | | | | |
| HUNGRY HORSE | 39.73 | -- | 3451.00 | -- | 3451.0 | 3451.0 | ACTIVE |
| FLATHEAD LAKE | Unknown | -- | 1791.00 | -- | 1971.0 | 1971.0 | ACTIVE |
| NOXON RAPIDS | Unknown | -- | 335.00 | -- | 335.0 | 335.0 | ACTIVE |
| PEND OREILLE | 406.20 | 112.40 | 1042.70 | -- | 1561.3 | 1561.3 | DEAD + INACTIVE + ACTIVE |
| COEUR D'ALENE | -- | 13.50 | 225.00 | -- | 238.5 | 238.5 | INACTIVE + ACTIVE |
| PRIEST LAKE | 20.00 | 28.00 | 71.30 | -- | 119.3 | 119.3 | DEAD + INACTIVE + ACTIVE |
| <u>CLEARWATER BASIN</u> | | | | | | | |
| DWORSHAK | -- | 1452.00 | 2007.00 | -- | 3459.0 | 3459.0 | INACTIVE + ACTIVE |
| <u>WEISER/BOISE/PAYETTE BASINS</u> | | | | | | | |
| MANN CREEK | 1.61 | 0.24 | 11.10 | -- | 11.1 | 11.1 | ACTIVE |
| CASCADE | -- | 50.00 | 653.20 | -- | 703.2 | 703.2 | INACTIVE + ACTIVE |
| DEADWOOD | 1.50 | -- | 161.90 | -- | 161.9 | 161.9 | ACTIVE |
| ANDERSON RANCH | 29.00 | 41.00 | 423.18 | -- | 464.2 | 464.2 | INACTIVE + ACTIVE |
| ARROWROCK | -- | -- | 286.60 | -- | 286.6 | 286.6 | ACTIVE |
| LUCKY PEAK | -- | 28.80 | 264.40 | 13.80 | 293.2 | 293.2 | INACTIVE + ACTIVE |
| LAKE LOWELL | -- | 8.00 | 169.10 | -- | 177.1 | 177.1 | INACTIVE + ACTIVE |
| <u>WOOD/LOST BASINS</u> | | | | | | | |
| MAGIC | -- | -- | 191.50 | -- | 191.5 | 191.5 | ACTIVE |
| LITTLE WOOD | -- | -- | 30.00 | -- | 30.0 | 30.0 | ACTIVE |
| MACKAY | 0.13 | -- | 44.37 | -- | 44.4 | 44.4 | ACTIVE |
| <u>UPPER SNAKE BASIN</u> | | | | | | | |
| HENRYS LAKE | -- | -- | 90.40 | -- | 90.4 | 90.4 | ACTIVE |
| ISLAND PARK | 0.40 | -- | 127.30 | 7.90 | 135.2 | 135.2 | ACTIVE + SURCHARGE |
| GRASSY LAKE | -- | -- | 15.18 | -- | 15.2 | 15.2 | ACTIVE |
| JACKSON LAKE | -- | -- | 847.00 | -- | 847.0 | 847.0 | ACTIVE |
| PALISADES | 44.10 | 155.50 | 1200.00 | -- | 1400.0 | 1400.0 | DEAD + INACTIVE + ACTIVE |
| RIRIE | 4.00 | 6.00 | 80.54 | 10.00 | 80.5 | 80.5 | ACTIVE |
| BLACKFOOT | -- | -- | 348.73 | -- | 348.7 | 348.7 | ACTIVE |
| AMERICAN FALLS | -- | -- | 1672.60 | -- | 1672.6 | 1672.6 | ACTIVE |
| <u>SOUTHSIDE SNAKE BASINS</u> | | | | | | | |
| OAKLEY | -- | -- | 77.40 | -- | 77.4 | 77.4 | ACTIVE |
| SALMON FALLS | 48.00 | -- | 182.65 | -- | 182.6 | 182.6 | ACTIVE |
| WILDHORSE | -- | -- | 71.50 | -- | 71.5 | 71.5 | ACTIVE |
| OWYHEE | 406.83 | -- | 715.00 | -- | 715.0 | 715.0 | ACTIVE |
| BROWNLEE | 0.45 | 444.00 | 975.30 | -- | 1419.3 | 1419.3 | INACTIVE + ACTIVE |
| <u>BEAR RIVER BASIN</u> | | | | | | | |
| WOODRUFF NARROWS | -- | -- | 57.30 | -- | 57.3 | 57.3 | ACTIVE |
| WOODRUFF CREEK | -- | -- | 4.00 | 4.00 | 4.0 | 4.0 | ACTIVE |
| BEAR LAKE | -- | -- | 1421.00 | -- | 1421.0 | 1421.0 | DEAD + ACTIVE |
| <u>RAINBOW INLET CANAL</u> | | | | | | | |
| MONTPELIER CK AT IRR WEIR NR MONTPELIER, ID | + MONTPELIER CK RESV (STORAGE CHANGE) | + CHAPMAN CANAL DIVERSION | + WOODRUFF NARROWS RESV (STORAGE CHANGE) | + DINGLE INLET CANAL | + SULPHUR CK RESV (STORAGE CHANGE) | + SULPHUR CK RESV (STORAGE CHANGE) | + RAINBOW INLET CANAL |
| CUB R NR PRESTON, ID - No Corrections | + WOODRUFF NARROWS RESV (STORAGE CHANGE) | + CHAPMAN CANAL DIVERSION | + WOODRUFF NARROWS RESV (STORAGE CHANGE) | + DINGLE INLET CANAL | + SULPHUR CK RESV (STORAGE CHANGE) | + SULPHUR CK RESV (STORAGE CHANGE) | + RAINBOW INLET CANAL |

Interpreting Streamflow Forecasts

Using the forecasts - an example

Introduction Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

Most Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations. There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast; it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

To Decrease the Chance of Having Too Little Water

If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value. There is a 30 percent chance the streamflow volume will be less than this forecast value.

90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value. There is a 10 percent chance the streamflow volume will be less than this forecast value.

To Decrease the Chance of Having Too Much Water

If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.

10 Percent Chance of Exceeding Forecast. There is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Deeth between March 1 and July 31.

Using the Higher Exceedance Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

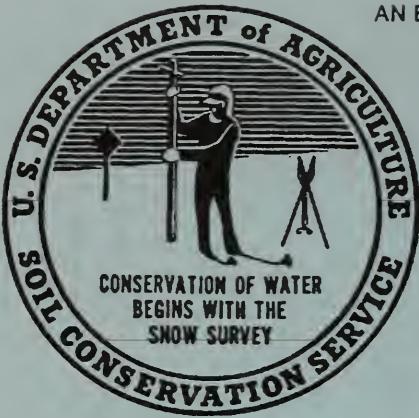
If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three out of ten years with similar conditions, streamflow volumes will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

| UPPER HUMBOLDT RIVER BASIN | | | | | |
|--------------------------------------|--------------------|---|--------------|---------------------------------|-----------------------|
| | | STREAMFLOW FORECASTS | | | |
| | | ←—DRYER————FUTURE CONDITIONS————WETTER————→ | | | |
| FORECAST POINT | FORECAST PERIOD | Chance of Exceeding 90% (1000AF) | 70% (1000AF) | 60% (Meet Probable) (1000AF) | 30% (AVG) (1000AF) |
| MARY'S RIVER nr Deeth | MAR-JUL APR-JUL | 5.0 8.0 | 20.0 17.0 | 36 31 | 77 74 |
| LAMOILLE CREEK nr Lamoille | MAR-JUL APR-JUL | 6.0 4.0 | 16.0 15.0 | 24 22 | 79 75 |
| NF HUMBOLDT RIVER at Devil's Gate | MAR-JUL | 6.0 | 12.0 | 43 | 73 |

For more information concerning streamflow forecasting ask your local SCS field office for a copy of "A Field Office Guide for Interpreting Streamflow Forecasts".



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In addition to basin outlook reports, a Water Supply Forecast for the Western United States is published by the Soil Conservation Service and National Weather Service monthly, January through May. Reports may be obtained from the Soil Conservation Service, West National Technical Center, 511 Northwest Broadway, Room 248, Portland, OR 97209-3489.